Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously Presented) A method of structuring interactive content for hardware devices, comprising the steps of:

determining display and memory parameters of a device based on device information;

parsing requested content including a plurality of pages into a document having a plurality of objects;

laying out said document according to said display and memory parameters of said device;

generating a document table for said document;

inputting said document and said document table into a content stream, wherein said document table includes object pointers corresponding to respective objects of the plurality of objects, wherein each object pointer includes an attribute pointer that points to a respective object in said content stream; and

transmitting said content stream to said device;

wherein said device reeeives said content stream and uses an attribute pointer that points to an object of said document included in said content stream to selectively access and copy said object from said content stream to a writable memory of said device, thereby enabling modification of said object without copying said entire doeument to said writable memory of said device, and wherein said attribute pointer is part of an object pointer from said doeument table in said content stream.

2. (Previously Presented) The method of claim 1, wherein said generating step comprises generating the document table on an object by object basis for said document and wherein said object-by-object basis corresponds to distinguishable pieces of said requested content.

3. (Previously Presented) The method of claim 1, whereby said document table provides points of reference to the objects of said document.

4. (Previously Presented) The method of claim 1, further comprising the steps of:
compressing said document and
encrypting said document.

5-6. (Canceled)

7. (Previously Presented) The method of claim 1, further comprising the step of:
storing said content stream on a hardware deviee.

8. (Canceled)

9. (Currently Amended) The method of claim 1, wherein said content stream is stored on said device, further comprising modifying said object, comprising the steps of:

accessing said object pointer corresponding to said object, wherein said objeet pointer further comprises a vtable pointer for aecessing instance methods associated with said object;

copying said object to writeable memory space;

altering said copied object with ~~respective~~ said instance methods accessed using said vtable pointer; and

updating said attribute pointer of said object pointer to point to the writeable memory space of said object that has been altered.

10. (Previously Presented) A computer system of structuring interactive content for hardware devices, comprising:

a module to determine display and memory parameters based on device information;

a module to parse requested eontent including a plurality of pages into a document having a plurality of objects;

a module to lay out said document according to said display and memory parameters of said device;

a module to generate a document table for said document

a module to input said document and said document table into a content stream, wherein said document table includes object pointers corresponding to respective objeets of the plurality of objects, wherein each object pointer includes an attribute pointer that points to a respective object in said content stream; and

a module to transmit said content stream to a hardware device;

wherein said device receives said content stream and uses an attribute pointer that points to an object of said document included in said content stream to selectively access and copy said object from said content stream to a writable memory of said device, thereby enabling modification of said object without copying said entire document to said writable memory of said device, and wherein said attribute pointer is part of an object pointer from said document table in said content stream.

11. (Previously Presented) The system of claim 10, wherein said generating module generates the document table on an object by object basis for said document and wherein said object-by-object basis corresponds to distinguishable pieces of said requested content.

12. (Previously Presented) The system of claim 10, whereby said document table provides points of reference to the objects of said document.

13. (Previously Presented) The system of claim 10, further comprising:

a module to compress said document; and

a module to enerypt said document.

14-15. (Canceled)

16. (Previously Presented) The system of claim 10, further comprising:
a module to store content stream on a hardware device.

17. (Canceled)

18. (Currently Amended) The system of claim 10, wherein said content stream is stored on said device, further comprising a modifying module comprising:

a module to access said object pointer corresponding to said object, wherein the object pointer is an object pointer of the document table and wherein said object pointer further comprises a vtable pointer for accessing instance methods associated with the object;

a module to copy said object to writeable memory space;

a module to alter said copied object with said ~~respective~~ instance methods accessed using vtable; and

a module to update said attribute pointer of said object pointer to point to the writeable memory space of said object that has been altered.

19. (Currently Amended) A tangible computer program product comprising a computer usable medium having control logic ~~computer readable program code means~~ embodied in said medium that, when executed by a computer, causes the ~~for causing a~~ computer to perform operations to structure interactive content for hardware devices, said operations ~~computer readable program code means~~ comprising:

~~a first computer readable program code means for causing a computer to determine~~ determining display and memory parameters of a device based on device information;

~~a second computer readable program code means for causing a computer to parse~~ parsing requested content ineluding a plurality of pages into a document having a plurality of objects;

~~a third computer readable program code means for causing a computer to lay~~ laying out said document according to said display and memory parameters of said device;

~~a fourth computer readable program code means for causing a computer to generate~~ generating a document table;

~~a fifth computer readable program code means for causing a computer to input~~ inputting said document and said document table into a content stream, wherein said document table includes object pointers eorresponding to respective objects of the plurality of objects, wherein each object pointer includes an attribute pointer that points to a respective object in said content stream; and

~~a sixth computer readable program code means for causing a computer to transmit~~ transmitting said content stream to a mobile device;

wherein said device receives said content stream and uses an attribute pointer that points to an object of said document included in said content stream to selectively access and copy said object from said content stream to a writable memory of said device, thereby enabling modification of said object without copying said entire document to said writable memory of said device, and wherein said attribute pointer is part of an object pointer from said document table in said content stream.

20. (Currently Amended) The computer program product of claim 19, wherein said generating ~~fourth computer readable program code means~~ comprises ~~a seventh computer readable program means for~~ generating the document table on an object by object basis for said document and wherein said object-by-object basis corresponds to distinguishable pieces of said requested content.

21. (Previously Presented) The computer program product of claim 19, whereby said document table provides points of reference to the objects of said document.

22. (Currently Amended) The computer program product of claim 19, said ~~computer program product~~ operations further comprising:

~~a seventh computer readable program code means for causing a computer to compress~~ compressing said document; and

~~a eighth computer readable program code means for causing a computer to encrypt~~ encrypting said document.

23-24. (Canceled)

25. (Currently Amended) The computer program product of claim 19, said operations ~~computer program product~~ further comprising:

~~a seventh computer readable program code means for causing a computer to store~~ storing said content stream on a hardware device.

26. (Canceled)

27. (Currently Amended) The computer program product of claim 19, wherein said content stream is stored on said device, said operations further comprising ~~seventh computer readable program code means for causing a computer to modify~~ modifying said object of said content stream, wherein said modifying ~~seventh computer readable program code means~~ comprises:

~~a eighth computer readable program means for causing a computer to access~~ accessing said object pointer corresponding to said object, wherein said object pointer further comprises a vtable pointer for accessing instance methods associated with said object;

~~an ninth computer readable program code means for causing a computer to copy~~ copying said object to writeable memory space;

~~a tenth computer readable program code means for causing a computer to alter~~ altering said copied object with said ~~respective~~ instance methods accessed using said vtable pointer; and

~~a eleventh computer readable program code means for causing a computer to update~~ updating said attribute pointer of said object pointer to point to the writeable memory space of said object that has been altered.

28. (Previously Presented) A method of structuring interactive content for mobile devices, comprising:

determining display and memory parameters of a device based on mobile device information;

parsing requested content into a document having a plurality of discrete objects, each discrete object having a format based on at least said display and memory parameters;

laying out said document according to said display and memory parameters of said device;

generating a document table based on an object-by-object basis for said document;

compressing said doeument according to said object-by-object basis;

encrypting said document according to said object-by-object basis;

inputting said document into a eontent stream according to said object-by-object basis;

inputting said document table into said content stream according to said object-by-object basis, wherein said document and said document table form said content stream according to said mobile device information, wherein said document table includes object pointers corresponding to respective objects of the plurality of objects and wherein each object pointer includes an attribute pointer that points to a respective object in said content stream; and

modifying an object of the plurality of objects, wherein said object corresponds to distinguishable pieces of said requested content, wherein said modifying comprises:

accessing an object pointer in said document table within said content stream, wherein the object pointer is an object pointer of the document table, and wherein said object pointer contains a vtable pointer for accessing instanee methods and an attribute pointer for accessing said object within said content stream,

selectively copying said object to a writeable memory thereby enabling modification of said object without copying said entire document to said writable memory of said device,

altering said copied object with said instance methods, and

updating an attribute pointer of said object pointer to the writeable memory space of said object that has been altered.

29. (Previously Presented) A computer system of structuring interactive content for mobile devices, comprising:

a module to determine display and memory parameters based on mobile device information;

a module to parse requested content into a document having a plurality of discrete objects, each discrete object having a format based on at least said layout and rendering parameters;

a module to generate a document table based on an object-by-object basis for said document;

a module to compress said document according to said object-by-object basis;

a module to encrypt said document aecording to said object-by-object basis;

a module to input said document into a content stream according to said object-by-object basis, wherein said document table includes object pointers corresponding to respective objects of the plurality of objeets and wherein each object pointer includes an attribute pointer that points to a respective object in said content stream;

a module to input said document table into said content stream according to said object-by-object basis, wherein said document and said document table form said content stream according to said mobile device information, wherein said device uses an attribute pointer of an object pointer corresponding to an object of said document included in said

content stream to aceess said object in said content stream and wherein said object pointer is one of said object pointers of said document table; and

a module to modify said object, wherein said content stream is stored on said device, wherein said object corresponds to distinguishable pieces of said request content, wherein means for modifying comprises:

a module to access said object pointer in said document table within said content stream, wherein said object pointer contains a vtable pointer for accessing instance methods and an attribute pointer for accessing said object within said content stream,

a module to selectively copy said object to a writeable memory space thereby enabling modification of said object without copying said entire doeument to said writable memory of said device,

a module to alter said copied object with said instance methods, and

a module to update an attribute pointer of said object pointer to the writeable memory space of said object that has been altered.

30 - 33. (Canceled)

34. (Currently Amended) The method of claim 1, wherein each object pointer of the document table further comprises a vtable pointer that points to an entry in a vtable, wherein each entry in the vtable comprises at least one function pointer that points to an instance method associated with the corresponding object, further eomprising:

modifying an object of the plurality of objects, comprising:

accessing a vtable pointer associated with the object through an ~~a respective~~ object pointer; and

using the vtable pointer to access [[an]] the instance method associated with the object.

35. (Previously Presented) The method of claim 34, wherein modifying further comprises:

copying the object into writeable memory.

36. (Previously Presented) The method of claim 35, wherein the modifying step is executed after the inputting said document step.

37. (Previously Presented) The method of claim 35, wherein the object is in a compressed form in the content stream, wherein the modifying further comprises:

decompressing the object before the copying step.

38. (Withdrawn) The method of claim 1, further comprising:

receiving a synchronization token from the hardware device;

wherein at least a portion of data included in the content stream is determined based on the synchronization token.

39. (Withdrawn) The method of claim 38, wherein the synchronization token is a data marker representative of data stored on the hardware device.

40. (Withdrawn) The method of claim 38, further comprising:

determining whether a previous transmission to the hardware device was successful based on the synchronization token.

41. (Currently Amended) A method for receiving and modifying data at a device, comprising:

receiving a content stream including a document and a document table,

wherein the document includes a plurality of objects laid out according to display and memory parameters of the device, wherein the document table includes a plurality of pointers corresponding to respective objects of the plurality of objects, wherein each object pointer includes an attribute pointer that points to a respective object of the plurality of objects;

storing at least said document in a first memory, wherein said first memory is read-only ~~non-writable~~ memory, and wherein said document cannot be modified from said first memory;

accessing an object pointer from said document table corresponding to an object of said document;

accessing an attribute pointer of said object pointer that points to said object;

selectively copying said object from said first memory to a second memory using said attribute pointer, wherein the second memory is a writeable memory;

modifying said copied object in said second memory; and

updating said attribute pointer to point to said copied object in said second memory.